



CENTER FOR ADVANCED AVIATION SYSTEM DEVELOPMENT (CAASD)

Midwest AirSpace Enhancement (MASE) Executive Summary

May 2005

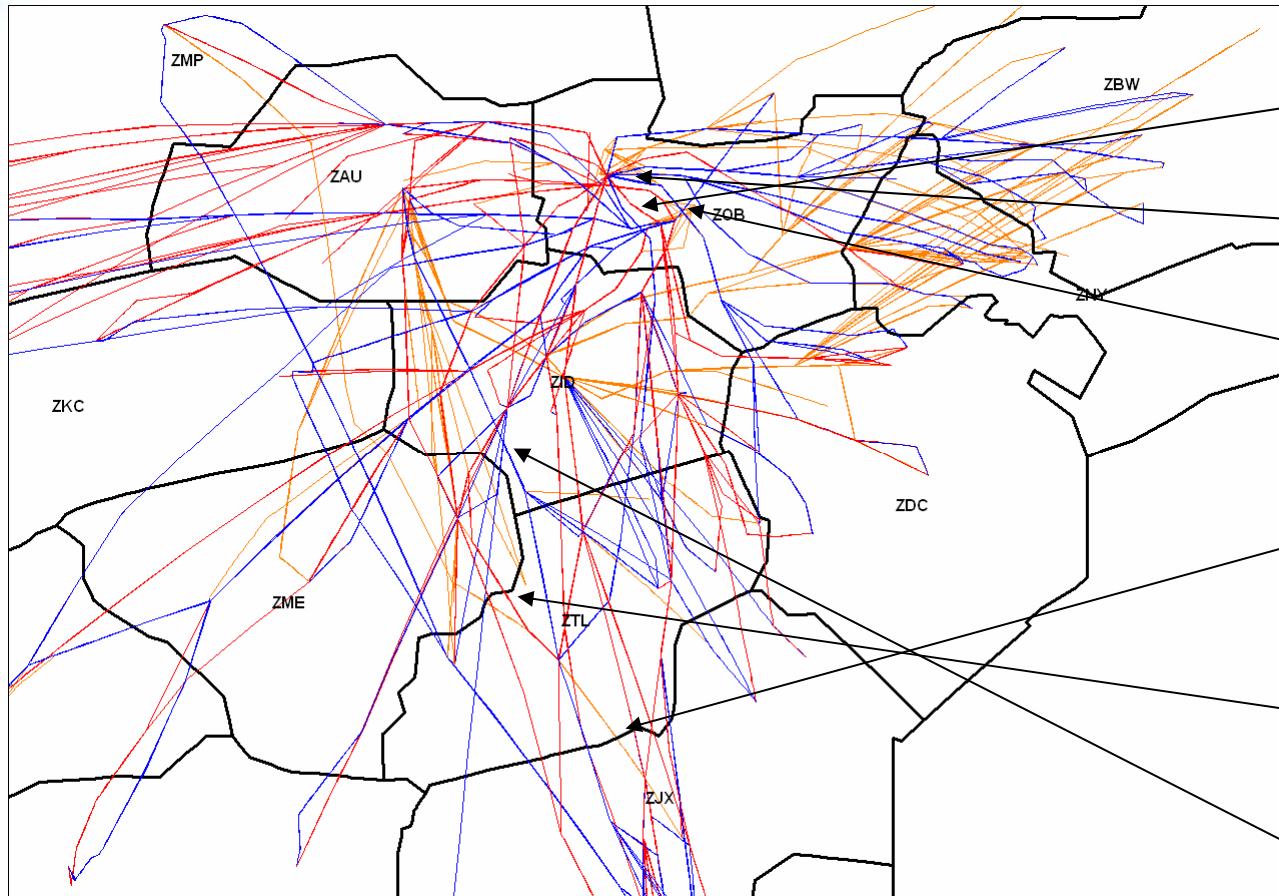


History of MASE

- The Midwest AirSpace Enhancement (MASE) is the consolidation of several rerouting efforts
 - ZOB and ZID reroutes for Detroit Metro and Cleveland Metro operations
 - ZTL and ZJX reroutes for operations influenced by Inappropriate Altitude For Direction Of Flight (IAFDOF)
 - ZTL, ZID, ZME, and ZAU reroutes for elimination of VXV transition to MACEY arrival into ATL
 - ZDC, ZMP, ZKC additional coordination for reroutes
- First design process started in 2000 (ZOB and ZID)
- Multi-Center modeling efforts in 2001-2002 by MITRE/CAASD
- Design completed 2004
- Environmental work 2003-2005; EA in progress



MASE Reroutes



- DTW Fifth Arrival
(ZOB,ZID)**
- DTW Departures
(ZOB,ZID)**
- CLE Arrivals and
Departures
(ZOB,ZID)**
- IAFDOF Reroute
(ZTL,ZJX)**
- Eliminate VXV
transition
(ZTL,ZID,ZME)**
- ORD Departures
via SWAPP
(ZAU,ZID,ZME)**

Additional reroutes (ZOB, ZID, ZDC, ZTL, ZJX, ZME, ZAU, ZKC, ZMP)



Design and Modeling for MASE



- **Facilitation of design meetings**
- **Trajectory modeling: 1400 flights through 9 Centers**
- **Metrics generation**
- **Development of new modeling techniques to quantify arrival and departure delay benefits**

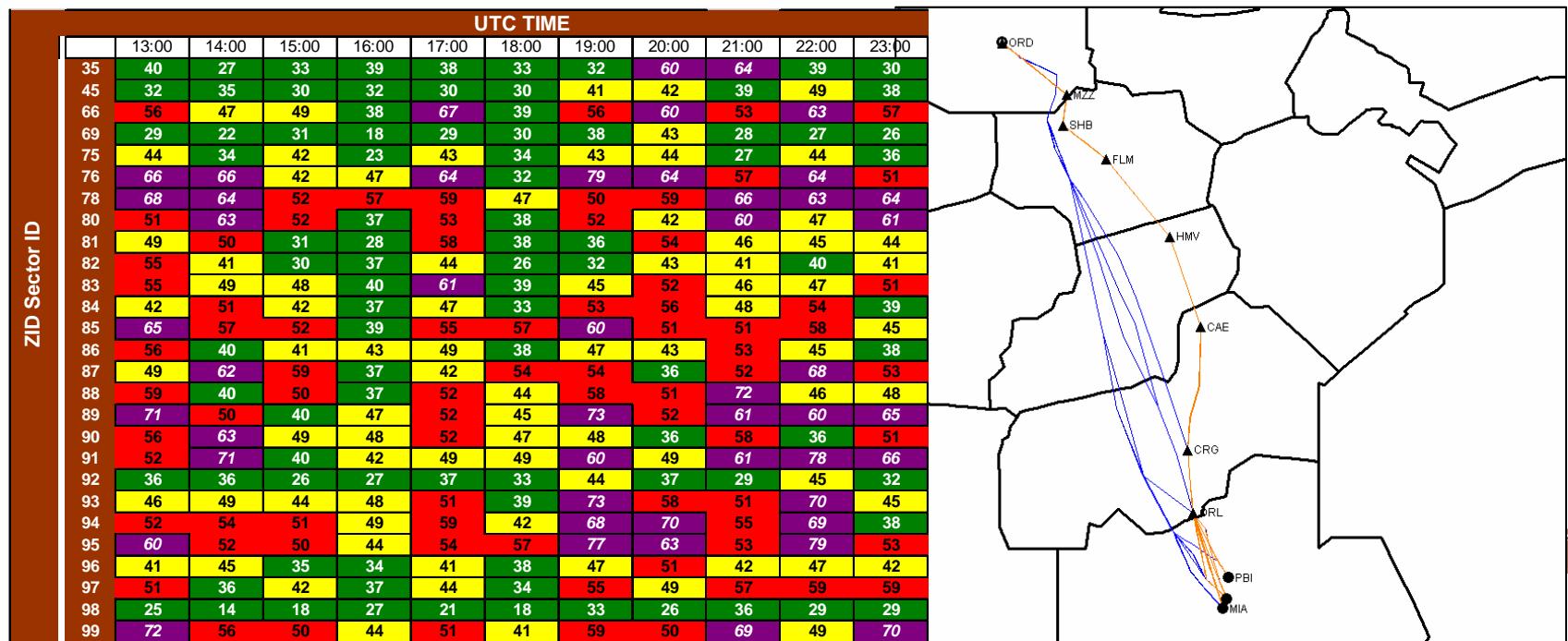


MASE Reroute Table (Sample)

Reroute Number	Departure Airport	Arrival Airport	Aircraft Type	RNAV	Filed Over	New Routing	Altitude Restrictions
1	DTW, DET, PTK	ATL				CAVVS1 RID IIU BWG RMG2	
1A	TOL, FNT, LAN	ATL				VWV RID IIU BWG RMG2	
2	MSP	ATL				ODI J30 BRIBE BDF ENL ENL162 PLESS J45 TINGS SALMS RMG2	
3	DAY, GRR, SBN, CVG	ATL				IIU BWG RMG2	
4	MCO	MSP				CTY VUZ ALO KASPR2	
5	MCO, MIA, FLL, PBI	STL				CTY J151 VISQA QBALL6.	
6	MSP	MIA			OMN or AMG	MSP: ALO J233 J45 STL J45 BNA J73 SZW J43 PIE CYY3	
6A	STL	MIA			OMN or AMG	STL: STL PLESS1 BNA J73 SZW J43 PIE CYY3	
7	MSP,	FLL			OMN or AMG	MSP: ALO J233 J45 STL J45 BNA J73 SZW J43 PIE FORTL4.	
7A	STL	FLL			OMN or AMG	STL: STL PLESS1 BNA J73 SZW J43 PIE FORTL4	
8	MSP,	PBI			OMN or AMG	MSP: ALO J233 J45 STL J45 BNA J73 SZW CTY LLAKE3	
8A	STL	PBI			OMN or AMG	STL: STL PLESS1 BNA J73 SZW CTY LLAKE3	
9	JAX	DTW				NOWAY J53 SPA HMV HNN WEEDA1	All at or below FL300 at ZID/ZOB boundary
10	FLL, PBI, MIA	DTW				ORL J53 SPA HMV HNN WEEDA1	All at or below FL300 at ZID/ZOB boundary
11	MCO	DTW				JAG3 IRQ J53 SPA HMV HNN WEEDA1	All at or below FL300 at ZID/ZOB boundary
12	TPA, SRQ, PIE	DTW				TAY J85 SPA HMV HNN WEEDA1	All at or below FL300 at ZID/ZOB boundary



MASE Metrics



Reroute Number	Departure Airport	Arrival Airport	Results	
			Count	Extra Distance
1	KTOL	KATL	7	54
1	KFNT	KATL	4	38
1	KDTW	KATL	16	52
2	KCVG	KATL	11	26



MASE Benefits

- Increase in arrival throughput at DTW
- Decrease in departure delay at DTW
- Reduction in arrival Miles In Trail restrictions caused by DTW, passed back through several Centers
- Reduction of workload complexity:
 - ZID and ZOB arrival and departure interaction
 - ZTL arrival traffic into ATL
 - ZTL and ZJX IAFDOF coordination
- Foundation for future redesign:
 - Additional ORD departure gates
 - CVG arrivals and departures
 - NY Metro arrival and departure routes